

Claim Amendments

1. (Currently amended) An oil-absorbing composition [[comprising an aqueous emulsion polymer having from 0.01% to 5% by weight of at least one ionic monomer and from 95% to 99.99% of two or more hydrophobic monomers, and optionally, one or more cross-linking agents, the oil-absorbing composition absorbing]] that absorbs at least 20 weight percent of at least one oily substance including [[or at least one]] hydrophobic materials in a heterogeneous medium, based on the total weight of the [[polymer]] composition, comprising an aqueous emulsion polymer having as polymerized monomer units: (a) from 1 to 3 % by weight of at least one ionic monomer selected from acrylic acid and methacrylic acid (b) from 90 to 95 % by weight of at least one C₁₂-C₂₀ alkyl (meth)acrylate (c) from 0 to 5 % by weight of at least one C₁-C₄ (meth)acrylate; the emulsion polymer having a glass having a Tg of 25° C or less; and polymer blends thereof.
2. (Currently amended) The oil-absorbing composition of claim 1, wherein the ionic monomer is (meth)acrylic acid and wherein the C₁₂-C₂₀ alkyl (meth)acrylate [[hydrophobic]] monomers are selected from the group consisting of [[C₁-C₂₄ alkyl acrylates, C₁-C₂₄ alkyl (meth)acrylates, methyl(meth)acrylate, ethyl acrylate (EA), isopropyl (meth)acrylate, butyl acrylate(BA), butyl (meth)acrylate (BMA), 2-ethyl hexyl acrylate, benzyl (meth)acrylate, octyl acrylate, decyl acrylate,]] lauryl acrylate, lauryl (meth)acrylate (LMA), oleyl (meth)acrylate, palmityl (meth)acrylate, stearyl (meth)acrylate (SMA), cetyl(meth)acrylate, eicosyl(meth)acrylate, blends of [[C₁₀-C₂₄]] C₁₂-C₂₀ alkyl (meth)acrylates, cetyl-eicosyl (meth)acrylate (CEMA); aromatic and alkyl aromatic esters of (meth)acrylic acid, unsaturated vinyl esters of (meth)acrylic acid derived from fatty acids and fatty alcohols and combinations thereof; and wherein the C₁-C₄ (meth)acrylate is methyl(meth)acrylate.

3. (Currently amended) The oil-absorbing composition of claim 1 ~~[[2]]~~, the aqueous emulsion polymer having a weight average molecular weight ranging from 1000 to 600,000.

4. (Cancelled)

5. (Cancelled)

4 ~~6~~ (Currently amended) The oil-absorbing composition of claim 1 ~~[[5]]~~, wherein the oil-absorbing composition is combined with at least one oily substance ~~[[or]]~~ including hydrophobic materials to produce an oil-containing composition, that is capable of releasing at least some amount of the oily substance ~~[[or]]~~ including hydrophobic materials on to a substrate.

5 ~~7~~ (Original) The oil-absorbing composition of claim ~~6~~ ⁴, wherein the oil-absorbing composition is in the form of a solid or liquid selected from the group consisting of spray dried powders, freeze dried powders, granules, films, water-borne latex dispersions and combinations thereof.

6 ~~8~~ (Currently amended) The oil-absorbing composition of claim ~~6~~ ⁴ ~~[[7]]~~, wherein the oil-absorbing composition ~~[[is combined with at least one oily substance or a hydrophobic material and]]~~ includes a carrier ~~[[to produce an oil-containing composition, wherein the oil-containing composition is capable of releasing at least some of the oily substance or hydrophobic material on to a substrate in a heterogeneous medium]]~~.

7 ~~9~~ (Currently amended) The oil-absorbing composition of claim 1 ~~[[8]]~~, wherein the oily substance ~~[[or]]~~ including hydrophobic materials is selected from the group consisting of body oils, sebum, squalene, proteins, protein containing substances, food, blood, fat, fatty acids, waxes, mineral oils, silicone oils, motor oils, crude oils, organic

compounds, lipophilic toxins, pesticides, insecticides, herbicides, greases, vegetable oils and combinations thereof; wherein the substrate is selected from the group consisting of textiles, fabric, hard surfaces, ceramics, wood, tile asphalt, cement, skin and combinations thereof; and wherein the carrier is selected from the group consisting of plastics sheets, cosmetic strips, fibers, textiles, filter materials, paper products, inorganic solids, detergents, cleaners, soaps and combinations thereof.

10. (Cancelled)

8 11. (Currently amended) A process for removing an oily substance [[or]] including hydrophobic materials from a substrate in a heterogeneous medium comprising the steps of:

directly contacting [[the substrate surface containing]] the oily substance or hydrophobic material on the substrate with an oil-absorbing composition that [[, wherein the composition]] comprises an aqueous emulsion polymer having as polymerized monomer units: (a) from 1 to 3 % by weight of at least one ionic monomer selected from acrylic acid and methacrylic acid (b) from 90 to 95 % by weight of at least one C₁₂-C₂₀ alkyl (meth)acrylate (c) from 0 to 5 % by weight of at least one C₁-C₄ (meth)acrylate; the emulsion polymer having a glass having a T_g of 25° C or less; and polymer blends thereof [[having from 0.01% to 5% by weight of at least one ionic monomer and from 95% to 99.99% of two or more hydrophobic monomers, and optionally, one or more cross-linking agents, and wherein the oil-absorbing composition absorbs at least 20 weight percent of at least one oily substance or at least one hydrophobic material in a heterogeneous medium, based on the total weight of the polymer composition; allowing the oil-absorbing composition]] to absorb the oily substance or hydrophobic material;
and removing the swollen oil-containing polymer composition from the substrate and the medium.

9 12. (Original) The process according to claim 11, wherein the process is reversible.

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13. (Currently amended) The process according to claim 12, wherein the ionic monomer is (meth)acrylic acid and wherein the hydrophobic monomers are selected from the group consisting of $[[C_1-C_{24}] \text{ alkyl acrylates, } C_1-C_{24}]$ $C_{12}-C_{20}$ alkyl (meth)acrylates, $[[\text{methyl(meth)acrylate, ethyl acrylate (EA), isopropyl (meth)acrylate, butyl acrylate(BA), butyl (meth)acrylate (BMA), 2-ethyl hexyl acrylate, benzyl (meth)acrylate, octyl acrylate, decyl acrylate,}] \text{ lauryl acrylate, lauryl (meth)acrylate (LMA), oleyl (meth)acrylate, palmityl (meth)acrylate, stearyl (meth)acrylate (SMA), cetyl(meth)acrylate, eicosyl(meth)acrylate, blends of } [[C_{10}-C_{24}] \text{ } C_{12}-C_{20} \text{ alkyl (meth)acrylates, cetyl-eicosyl (meth)acrylate (CEMA); aromatic and alkyl aromatic esters of (meth)acrylic acid, unsaturated vinyl esters of (meth)acrylic acid derived from fatty acids and fatty alcohols and combinations thereof; and wherein the } C_1-C_4 \text{ (meth)acrylate is methyl(meth)acrylate.}$

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14. (Original) The process according to claim 13, the aqueous emulsion polymer having a weight average molecular weight ranging from 1000 to 600,000.

15. (Cancelled)

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16. (Currently amended) The process according to claim 11 $[[15]]$, wherein the oil-absorbing composition is in the form of a solid or liquid selected from the group consisting of spray dried powders, freeze dried powders, granules, films, water-borne latex dispersions and combinations thereof.

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17. (Original) The process according to claim 16, wherein the oily substance or hydrophobic material is selected from the group consisting of body oils, sebum, squalene, proteins, protein containing substances, food, blood, fat, fatty acids, waxes, mineral oils, silicone oils, motor oils, crude oils, organic compounds, lipophilic toxins, pesticides, insecticides, herbicides, greases, vegetable oils and combinations thereof; wherein the substrate is selected from the group consisting of textiles, fabric,

hard surfaces, ceramics, wood, tile asphalt, cement, skin and combinations thereof; and wherein the carrier is selected from the group consisting of plastics sheets, cosmetic strips, fibers, textiles, filter materials, paper products, inorganic solids, detergents, cleaners, soaps and combinations thereof.

14 18. (Currently amended) A process for removing an oily substance [[or]] including hydrophobic materials in a heterogeneous medium [[including]] comprising the steps of: combining a substrate containing an oily substance, an oil-absorbing polymer composition, wherein the oil-absorbing composition comprises an aqueous emulsion polymer having as polymerized monomer units: (a) from 1 to 3 % by weight of at least one ionic monomer selected from acrylic acid and methacrylic acid (b) from 90 to 95 % by weight of at least one C₁₂-C₂₀ alkyl (meth)acrylate (c) from 0 to 5 % by weight of at least one C₁-C₄ (meth)acrylate; the emulsion polymer having a glass having a Tg of 25° C or less; and polymer blends thereof [[from 0.01% to 5% by weight of at least one ionic monomer and from 95% to 99.99% of two or more hydrophobic monomers, and optionally, one or more cross-linking agents]] and, optionally, a complexation agent to facilitate transport in the medium, wherein the oil-absorbing composition absorbs at least 20 weight percent of at least one oily substance or at least one hydrophobic material in a heterogeneous medium, based on the total weight of the polymer composition; allowing the composition to absorb the oily substance or hydrophobic material; and separating the swollen oil-containing polymer composition from the medium.

15 19. (Original) The process according to claim 18, wherein the process is reversible.

16 20. (Currently amended) The process according to claim 19, wherein the ionic monomer is (meth)acrylic acid and wherein the hydrophobic monomers are selected from the group consisting of C₁-C₂₄ alkyl acrylates, C₁-C₂₄ alkyl (meth)acrylates, methyl(meth)acrylate, ethyl acrylate (EA), isopropyl (meth)acrylate, butyl acrylate(BA), butyl (meth)acrylate (BMA), 2-ethyl hexyl acrylate, benzyl

(meth)acrylate, octyl acrylate, decyl acrylate, lauryl acrylate, lauryl (meth)acrylate (LMA), oleyl (meth)acrylate, palmityl (meth)acrylate, stearyl (meth)acrylate (SMA), cetyl(meth)acrylate, eicosyl(meth)acrylate, blends of C₁₀-C₂₄ alkyl (meth)acrylates, cetyl-eicosyl (meth)acrylate (CEMA); aromatic and alkyl aromatic esters of (meth)acrylic acid, unsaturated vinyl esters of (meth)acrylic acid derived from fatty acids and fatty alcohols and combinations thereof; and wherein the C₁-C₄ (meth)acrylate is methyl(meth)acrylate.

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16 21. (Original) The process according to claim 20, the aqueous emulsion polymer having a weight average molecular weight ranging from 1000 to 600,000.

22. (Cancelled)

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17 23. (Currently amended) The process according to claim 18 [[22]], wherein the composition is in the form of a solid or liquid selected from the group consisting of spray dried powders, freeze dried powders, granules, films, water-borne latex dispersions and combinations thereof.

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18 24. (Original) The process according to claim 23, wherein the oily substance or hydrophobic material is selected from the group consisting of body oils, sebum, squalene, proteins, protein containing substances, food, blood, fat, fatty acids, waxes, mineral oils, silicone oils, motor oils, crude oils, organic compounds, lipophilic toxins, pesticides, insecticides, herbicides, greases, vegetable oils and combinations thereof; wherein the substrates are selected from the group consisting of textiles, fabric, hard surfaces, ceramics, wood, tile asphalt, cement, skin and combinations thereof; and wherein the carriers are selected from the group consisting of plastics sheets, cosmetic strips, fibers, textiles, filter materials, paper products, inorganic solids, detergents, cleaners, soaps and combinations thereof.